**3GPP TSG-RAN WG2 Meeting #116bisR2-2xxxxx**

**Electronic January 2022**

**Title: DRAFT**LS on feMIMO RRC parameters

**Response to: -**

**Release:** Rel-17

**Work Item:** NR\_feMIMO-Core

**Source:** ERICSSON to be replaced by 3GPP TSG-RAN WG2

**To:** 3GPP TSG-RAN WG1

**Contact Person:**

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**Attachments:** None

**1. Overall Description:**

RAN2 has been discussing several L1 parameter related open issues left to RAN2 as well as overall the implementation of all L1 feMIMO RRC parameters. RAN2 would like feedback from RAN1 about the following aspects.

**1. MultiBeam**

**CORESET** **to follow Unified TCI state**

RAN2 has discussed the per CORESET RRC based indication based on RAN1 agreements. RAN2 understands that the 1 bit RRC indication “followunifiedTCIstate” would be needed for CORESET “B”. However, as in RRC there is no types of CORSETs RAN2 would like to ask from RAN1 some clarification.

***Question 1.1*** RAN2 would like to ask whether a the per CORESET indications of followunifiedTCIstate of PDSCH according to RAN1 intention for the unified TC state operation and whether any limitation or condition needs to specified for the parameter?

***Question 1.2*** RAN2 would like to ask how the CORESET “B” and the “DM-RS for non-UE dedicated PDCCH” in ApplyTCI-State-r17-DLList parameter are related?

**ApplyTCI-State-r17-DLList**

RAN2 notes there is discrepancy with the description and comment related to ApplyTCI-State-r17-DLList. RAN2 has baseline implementation for this functionality where 1 bit “followunifiedTCIstateof PDSCH” is added in “AssociatedReportConfigInfo” where QCL for an aperiodic resource is currently configured.

**Question 1.3** RAN2 would like to ask whether this implementation is according to intended functionality or whether this indication should be placed per NZP-CSI-RS resource?

Note that it will be RAN2 signalling design whether supporting this functionality is 1 bit indication per field X, or by maintaining lists of field X.

**SRSResourceSet**

A parameter “followUnifiedTCIstate-r17” is added to SRSResourceSet IE according to RAN1 guidance.

**Question 1.4** RAN2 asks RAN1 whether the stated restrictions are enough and whether those should be placed in TS 38.331 or these will be specified by RAN1?

**MPE**

In RAN2#116, RAN2 agreed the following

*4: Rel-17 MPE configuration can be included in PHR-Config. Will ask R1 whether MPE information can apply to both ICBM and mTRP*

This will impact at least the corresponding MAC CE design but potentially also configuration. Further, the parameter excel has TBD on the range for configuring the MPE resource pool

**Question 1.5** RAN2 would like to ask RAN1 whether the enhanced MPE reporting applies also to mTRP operation and if so whether any RRC signaling changes are then needed?

Further, the parameter excel has TBD on the range for configuring the MPE resource pool. RAN2 understanding is that the MPE-ResourcePool may be a list of SSB or CSI-RS resources.

**Question 1.6** RAN2 would like to ask RAN1 to confirm that MPE-ResourcePool may be a list of SSB or CSI-RS resources and to inform what is the maximum number of resource in the pool?

**Question 1.7** RAN2 would like to ask RAN1 to confirm whether the RAN2 agreement about including the MPE parameters in the PHRConfig which is configured per cell group in IE MAC-CellGroupConfig or whether the configuration should be per BWP as indicated in RAN1 excel?

**2. mTRP PUCCH**

RAN2 has agreed to add a new IE for power control for mTRP FR1 operation. RAN2 would need information on the number of power control sets to be configured.

**Question 2.1** RAN2 would like to ask how many power control sets needs to be configured per UE/cell/BWP?

**3. mTRP PDCCH**

RAN1 indicates that searchSpaceLinking is to be linking twom SS sets by RRC configuration with various limitations. However, it was not clarified whether the linking should be applied searchspaces of Rel-15 and Rel-16.

**Question 3.1** RAN2 would like to ask whether the searchSpaceLinking should be applied searchspaces of Rel-15 and Rel-16?

**4. CSI mTRP**

RAN2 is instructed to configure two CBSRs per CodebookConfig, and two RI restrictions per CodebookConfig. However, it is not clear which CBSRs are intended to be used and whether there are specific restrictions to be applied.

**Question 4.1** RAN2 would like to ask which CBSRs are intended to be used and whether there are specific restrictions to be applied?

**5. SRS**

**Question 5.1** RAN2 would like to ask whether the parameter startPosition should be there in resourceMapping also Rel-17 as it is there in Rel15 and Rel 16?

**2. Actions:**

**To RAN1 group:**

**ACTION:** RAN2 respectfully asks RAN1 to provide responses to above questions.

**3. Date of Next TSG-RAN WG2 Meetings:**

TSG-RAN WG1 Meeting #117-e 21 February - 3 March 2022 Electronic

ASN1 review April 2022 Electronic

TSG-RAN WG1 Meeting #118-e 16 – 27 May 2022 Electronic